



**UNITED STATES DEPARTMENT OF COMMERCE**

**United States Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

HC

75

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/468,249 12/10/99 CHANG

M M-7970-US

024251 MM91/0620  
SKJERVEN MORRILL MACPHERSON LLP  
25 METRO DRIVE  
SUITE 700  
SAN JOSE CA 95110

EXAMINER

RAQ.S

ART UNIT

PAPER NUMBER

2814

DATE MAILED:

06/20/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

<b>Office Action Summary</b>	Application No.		Applicant(s)	
	09/468,249		CHANG ET AL.	
	Examiner		Art Unit	
	Steven H. Rao		2814	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

- |   |  |
|---|--|
| 15) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 20) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent publication No. 9-64421( herein after Yamada-I).

With respect to claim 1 Yamada -1 describes a semiconductor package including : a semiconductor die having first and second sides ( Yamada-I fig. 1 # 3), a first electrical terminal located on first side ( Yamada-1 fig. 1 # 7) at least a second electrical terminal located on second side ( Yamada -1, fig. 1 #7 above 2) and a cup shaped lead frame in contact with first terminal ( Yamada-1 fig. 1 # 5 , the die being located in the cup ( Fig. 1, 3 within 5), and atleast one of the lead frame containing a portion coplanar with the second side of the die ( Fig. 1 end of 5 coplanar with 7 that is above 2).

With respect to claim 2 , Yamada -1 describes a semiconductor package including : a layer of conductive cement located inside the cup between the first terminal and the lead frame ( Yamada-1 , fig. 1 # 6 between 7-1 and the cup 5).

Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada-1 as applied to claims 1-2 above, and further in view of Umemoto ( Japanese Patent Publication No. 8-335720, herein after Umemoto).

With respect to claim 3 , Yamada -1 describes a semiconductor package including : a cup shaped lead frame.

Yamada-1 does not specifically disclose the conductive cement to be an epoxy but mentions a silver compound. However it is well known in the art to use an epoxy cement instead of silver compound.

With respect to claim 4 , Yamada -1 describes a semiconductor package including : a cup shaped lead frame.

Yamada-1 does not specifically disclose a plastic capsule in contact with the outside of the cup.

However Umemoto in fig. 1# 5 and English Abstract describes an epoxy resin capsule 5 that is contact with the outside of the cup to prevent exfoliation of the electrode and improve the reliability thereof.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Umemoto's capsule in Yamada-1's device to prevent exfoliation of the electrode and improve the reliability thereof. ( Umemoto – English Abstract last two lines).

With respect to claim 5 , Yamada -1 describes a semiconductor package including : wherein the die is in electrical contact with a bottom of the cup ( Yamada -1, fig. 1 3 in electrical contact with 5 )

With respect to claim 6 , Yamada -1 describes a semiconductor package including : wherein a plastic material is located inside the cup between an edge of the die and the lead frame ( Umemmoto figs. 2 and 3 # 24).

With respect to claim 6 , Yamada -1 describes a semiconductor package including : wherein the semiconductor die comprises a MOSFET. (well known in the art).

With respect to claim 8 , Yamada -1 describes a semiconductor package including : wherein semiconductor die comprises an Integrated circuit ( Yamada- 1 figs.).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H. Rao whose telephone number is 703-306-5945. The examiner can normally be reached on M-F, 8.00 to 5.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703- 306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703- 308-0956.

*SR*  
*6/13/01*

\*\*\*

June 13, 2001



OLIK CHAUDHURI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800